

Index Criteria for endorsement of indices by IAGA:

Separating ‘properties’ of the index from the ‘process’ by which it is endorsed.

(effective as of IAGA 2009)

Properties: An IAGA-endorsed geomagnetic activity index is one that is derived from magnetic field measurements made at magnetic observatories and that satisfies the following five properties. A proposed index that fails to meet all these criteria shall be deemed to be not endorsed by IAGA but may be proposed for reconsideration at a future IAGA assembly.

1. The index must be shown to describe or quantify a geophysical quantity not already described by existing IAGA indices, or be shown to describe or quantify more effectively, a geophysical quantity compared with an existing index.
2. The derivation of the index will be clearly defined; the algorithm will be available through appropriate refereed and citeable publication(s); the index must be shown to be independently reproducible using the citeable publications and the responsible institute will ensure the homogeneity of the data series over the whole time series.
3. Observatories providing data for the index will be reliable, well-established and fully operational according to current scientific standards. If relocation or change of an observatory happens, the index producer and the relevant IAGA committee will urge for a suitable overlapping operation period of the observatories. In the event that it is not possible, the index producer has the responsibility to propose and instigate a suitable way for ensuring the data series homogeneity. The index producer should evaluate and document changes to the index, and report to the relevant IAGA committee.
4. Prior to any proposal for endorsement being made, the index must have been freely available for scientific use long enough, so as to be already in use by the scientific community, as demonstrated by refereed and citeable publications.
5. Past, present and future values of the index will be made available via the websites (or appropriate future electronic and published means) of either the host institute or an agreed substitute, and of ISGI once endorsed, to enable access to data. The proposers will provide assurances with regard to availability of the index and of the time-lag in producing the index in future and in archiving and access to archived data.

Process: IAGA will consider endorsing a magnetic index according to the following process:

1. Any proposal for endorsement will be made to, and be reviewed by, the IAGA committee that discusses geomagnetic indices, currently working group V-DAT of Division V. Any

proposal will be made no later than **one year** prior to an IAGA assembly and will be directed to the chair of the relevant IAGA committee.

2. An *ad-hoc* 'Task Force' of a minimum of three scientific experts will be appointed at the discretion of the relevant IAGA committee chair. The director of ISGI, or an ISGI representative nominated by the ISGI director should be part of the Task Force. The Task group chair will be appointed by the relevant IAGA WG chair; the chairperson should be a scientist with recognized expertise in the field of geomagnetic indices. The Task Force will assess the proposed index, its qualities, and its compliance with the five index criteria. (see 'properties'). The Task Force will be provided with relevant supporting material (electronic and printed) by the proposers, not less than **six months** before the IAGA meeting where endorsement is sought.

3. The Task Force will provide a majority report to the relevant IAGA committee during the IAGA assembly where endorsement is sought. Where the report findings are not unanimous, the minority report(s) shall also be presented at the relevant IAGA committee meeting.

4. The proposed geomagnetic index will be endorsed at a business meeting of the relevant IAGA committee through a majority member vote, and through a subsequent resolution supported by the IAGA Executive Committee.

5. A successful application will be advertised by the IAGA committee chair through relevant scientific publications, such as the IAGA News. If unsuccessful, the proposers will be provided with the points of failure by the Task Force chair, and be invited to resubmit their application at a subsequent IAGA assembly. After **three** failed attempts, the proposed index shall no longer be considered by IAGA.